CLAIM AMENDMENTS

1. (previously presented) An apparatus, comprising:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier, said laser capture microdissection transfer film including at least one integrally formed structural feature that protrudes and provides a controllable spacing between said laser capture microdissection transfer film and a sample.

2. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film includes a material, that upon exposure to sufficient electromagnetic energy, expands and projects itself away from said substrate surface.

3. (previously presented) The apparatus of claim 1, further comprising a scattering media in proximity to said laser capture microdissection transfer film.

4. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film includes an absorptive substance.

5. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film is hot vacuum baked onto said substrate surface.

6. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film is bonded to said substrate surface with a refractive index matching transparent glue.

7. (previously presented) The apparatus of claim 1, wherein said transfer film carrier includes a negative draft such that a distal diameter defined by said surface of said transfer film carrier is greater than a proximal diameter defined by an inner perimeter of said transfer film carrier.

8. (previously presented) The apparatus of claim 7, wherein said transfer film carrier includes a girdle that is contiguous with said negative draft.

9. (previously presented) The apparatus of claim 7, wherein said transfer film carrier includes a chamfer that is contiguous with said substrate surface.

10. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film has a thickness that is less than 500 microns.

11. (currently amended) The apparatus of claim 1, wherein said laser capture microdissection transfer film has a thickness that is held to within 20% of a given value.

12. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film has a capture surface that is opposite said substrate surface, said capture surface having a flatness that is held within five microns.

13. (previously presented) The apparatus of claim 1, wherein said laser capture microdissection transfer film includes at least one pedestal that protrudes and defines a laser capture microdissection acquisition zone.

14. (previously presented) The apparatus of claim 1, where said laser capture microdissection transfer film includes a protruding feature that runs along at least three points of a perimeter of said laser capture microdissection transfer film.

15. (previously presented) A microcentrifuge tube cap, comprising:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier, said laser capture microdissection transfer film including at least one integrally formed structural feature that protrudes and provides a controllable spacing between said laser capture microdissection transfer film and a sample.

16. (previously presented) An integral portion of a biological reaction vessel, comprising:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier, wherein said laser capture microdissection transfer film includes at least one integrally formed structural feature that protrudes and provides a controllable spacing between said laser capture microdissection transfer film and a sample.

17. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film includes a material, that upon exposure to sufficient electromagnetic energy, expands and projects itself away from said substrate surface.

18. (original) The integral portion of a biological reaction vessel according to claim 16, further comprising a scattering media in proximity to said laser capture microdissection transfer film.

19. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film includes an absorptive substance.

20. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film is hot vacuum baked onto said substrate surface.

21. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film is bonded to said substrate surface with a refractive index matching transparent glue.

22. (original) The integral portion of a biological reaction vessel according to claims 16, wherein said transfer film carrier includes a negative draft such that a distal diameter defined by said surface of said transfer film carrier is greater than a proximal diameter defined by an inner perimeter of said transfer film carrier.

23. (original) The integral portion of a biological reaction vessel according to claim 22, wherein said transfer film carrier includes a girdle that is contiguous with said negative draft.

24. (original) The integral portion of a biological reaction vessel according to claim 22, wherein said transfer film carrier includes a chamfer that is contiguous with said substrate surface.

25. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film has a thickness that is less than 500 microns.

26. (currently amended) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film has a thickness that is held to within 20% of a given value.

27. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film has a surface opposite said substrate surface having a flatness that is held within five microns.

28. (original) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film includes at least one pedestal that protrudes and defines a laser capture microdissection acquisition zone.

29. (previously presented) The integral portion of a biological reaction vessel according to claim 16, wherein said laser capture microdissection transfer film includes a protruding feature that runs along at least three points of a perimeter of said laser capture microdissection transfer film.

30. (previously presented) A microcentrifuge tube cap, comprising an integral portion of a biological reaction vessel including:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier, wherein said laser capture microdissection transfer film includes at least one integrally formed structural feature that protrudes and provides a controllable spacing between said laser capture microdissection transfer film and a sample.

31. (previously presented) A laser capture microdissection assembly comprising:

a plate having a top surface; and

at least one laser capture microdissection cap coupled to said top surface of said plate, wherein said at least one laser capture microdissection cap includes:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier, wherein said laser capture microdissection transfer film includes at least one integrally formed structural feature that protrudes and provides a controllable space in between said laser capture microdissection transfer film and a sample.

32. (original) The laser capture microdissection assembly of claim 31, further comprising a release layer coated on said plate, said release layer being located between said plate and said laser capture microdissection transfer film of each of said at least one laser capture microdissection cap.

33. (original) The laser capture microdissection assembly of claim 32, wherein said release layer includes at least one nonadhesive material selected from the group consisting of silicones and polytetrafluoroethylenes.

34. (original) The laser capture microdissection assembly of claim 33, wherein said at least one nonadhesive material is a silicone containing surfactant agent.

35. (original) The laser capture microdissection assembly of claim 31, wherein a plano-concave void is located between said laser capture microdissection transfer film of said at least one laser capture microdissection cap and said top surface of said plate.

36. (original) The laser capture microdissection assembly of claim 31, wherein said laser capture microdissection transfer film includes a transparent thermoplastic.

37. (original) The laser capture microdissection assembly of claim 31, wherein said laser capture microdissection transfer film includes an absorptive substance.

38. (original) The laser capture microdissection assembly of claim 31, wherein said laser capture microdissection transfer film is hot vacuum baked onto said substrate surface.

39. (original) The laser capture microdissection assembly of claim 31, wherein said transfer film carrier includes a negative draft such that a distal diameter defined by said surface of said transfer film carrier is greater than a proximal diameter defined by an inner perimeter of said transfer film carrier.

40. (original) The laser capture microdissection assembly of claim 31, wherein said laser capture microdissection transfer film has a thickness that is less than 500 microns.

41. (original) The laser capture microdissection assembly of claim 31, wherein said laser capture microdissection transfer film has a thickness that is held to within 20% of a given value.

42. (original) The laser capture microdissection assembly of claim 31, wherein said laser capture microdissection transfer film has a surface opposite said substrate surface having a flatness that is held within five microns.

43. (original) The laser capture microdissection assembly of claim 31, further comprising at least one diffuser coupled to said at least one transfer film carrier.

44. (previously presented) A set of microcentrifuge tube caps, comprising a laser capture microdissection assembly including:

a plate having a top surface; and

at least one laser capture microdissection cap coupled to said top surface of said plate, wherein said at least one laser capture microdissection cap includes:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier, wherein said laser capture microdissection transfer film includes at least one integrally formed structural feature that protrudes and provides a controllable space in between said laser capture microdissection transfer film and a sample.

Claims 45-48 (cancelled)

49. (currently amended) An apparatus comprising:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier wherein said transfer film carrier is adapted to ~~be coupled to~~ cap a vessel such that at least a portion of said transfer film is disposed inside said vessel.

50. (previously presented) The apparatus according to claim 49, wherein said laser capture microdissection transfer film includes a material, that upon exposure to sufficient electromagnetic energy, expands and projects itself away from said substrate surface.

51. (previously presented) The apparatus according to claim 49, further comprising a scattering media in proximity to said laser capture microdissection transfer film.

52. (currently amended) The apparatus according to claim 49, wherein said laser capture microdissection transfer film includes a base material and an absorptive substance.

53. (previously presented) The apparatus according to claim 49, wherein said laser capture microdissection transfer film is hot vacuum baked onto said substrate surface.

54. (previously presented) The apparatus according to claim 49, wherein said laser capture microdissection transfer film is bonded to said substrate surface with a refractive index matching transparent glue.

55. (previously presented) The apparatus according to claim 49, wherein said transfer film carrier includes a negative draft such that a distal diameter defined by said surface of said transfer film carrier is greater than a proximal diameter defined by an inner perimeter of said transfer film carrier.

56. (previously presented) The apparatus according to claim 55, wherein said transfer film carrier includes a girdle that is contiguous with said negative draft.

57. (previously presented) The apparatus according to claim 55, wherein said transfer film carrier includes a chamfer that is contiguous with said substrate surface.

58. (previously presented) The apparatus according to claim 49, wherein said laser capture microdissection transfer film has a thickness that is less than 500 microns.

59. (currently amended) The apparatus according to claim 49, wherein said laser capture microdissection transfer film has a thickness that is held to within 20% of a given value.

60. (previously presented) The apparatus according to claim 49, wherein said laser capture microdissection transfer film has a surface opposite said substrate surface having a flatness that is held within five microns.

61. (currently amended) An apparatus comprising:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier wherein said transfer film carrier is adapted to be coupled to a vessel such that at least a portion of said transfer film is disposed inside said vessel; and

~~The apparatus according to claim 49,~~ wherein said laser capture microdissection transfer film includes at least one pedestal that protrudes and defines a laser capture microdissection acquisition zone.

62. (currently amended) An apparatus comprising:

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier wherein said transfer film carrier is adapted to be coupled to a vessel such that at least a portion of said transfer film is disposed inside said vessel; and

~~The apparatus according to claim 49,~~ wherein said laser capture microdissection transfer film includes a protruding feature that runs along at least three points of a perimeter of said laser capture microdissection transfer film.

63. (previously presented) An apparatus comprising:

a transfer film carrier having a substrate surface, and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier wherein said transfer film carrier is adapted to cap a microcentrifuge tube such that at least a portion of said transfer film is disposed inside said microcentrifuge tube.

64. (previously presented) A laser capture microdissection assembly comprising:

a plate having a top surface; and

at least one laser capture microdissection cap coupled to said top surface of said plate, wherein said at least one laser capture microdissection cap includes

a transfer film carrier having a substrate surface; and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier.

65. (previously presented) The laser capture microdissection assembly of claim 64, further comprising a release layer coated on said plate, said release layer being located between said plate and said laser capture microdissection transfer film of each of said at least one laser capture microdissection cap.

66. (previously presented) The laser capture microdissection assembly of claim 65, wherein said release layer includes at least one nonadhesive material selected from the group consisting of silicones and polytetrafluoroethylenes.

67. (previously presented) The laser capture microdissection assembly of claim 66, wherein said at least one nonadhesive material is a silicone containing surfactant agent.

68. (previously presented) The laser capture microdissection assembly of claim 64, wherein a plano-concave void is located between said laser capture microdissection transfer film of said at least one laser capture microdissection cap and said top surface of said plate.

69. (previously presented) The laser capture microdissection assembly of claim 64, wherein said laser capture microdissection transfer film includes a transparent thermoplastic.

70. (previously presented) The laser capture microdissection assembly of claim 64, wherein said laser capture microdissection transfer film includes an absorptive substance.

71. (previously presented) The laser capture microdissection assembly of claim 64, wherein said laser capture microdissection transfer film is hot vacuum baked onto said substrate surface.

72. (previously presented) The laser capture microdissection assembly of claim 64, wherein said transfer film carrier includes a negative draft such that a distal diameter defined by said surface of said transfer film carrier is greater than a proximal diameter defined by an inner perimeter of said transfer film carrier.

73. (previously presented) The laser capture microdissection assembly of claim 64, wherein said laser capture microdissection transfer film has a thickness that is less than 500 microns.

74. (previously presented) The laser capture microdissection assembly of claim 64, wherein said laser capture microdissection transfer film has a thickness that is held to within 20% of a given value.

75. (previously presented) The laser capture microdissection assembly of claim 64, wherein said laser capture microdissection transfer film has a surface opposite said substrate surface having a flatness that is held within five microns.

76. (previously presented) The laser capture microdissection assembly of claim 64, further comprising at least one diffuser coupled to said at least one transfer film carrier.

77. (previously presented) A set of microcentrifuge tube caps, comprising a laser capture microdissection assembly including:

a plate having a top surface; and

at least one laser capture microdissection cap coupled to said top surface of said plate, wherein said at least one laser capture microdissection cap includes

a transfer film carrier having a substrate surface, and

a laser capture microdissection transfer film coupled to said substrate surface of said transfer film carrier.

78. (previously presented) The apparatus according to claim 49 further including a sealing feature that excludes a portion of said transfer film carrier from the interior of said vessel.

79. (previously presented) The apparatus according to claim 49 wherein said vessel includes an internal ridge adapted to contact a portion of said transfer film carrier.

80. (previously presented) The apparatus according to claim 79 wherein said transfer film carrier includes at least one stand-off; and the portion of the carrier contacted by said internal ridge of the vessel includes said at least one stand-off.

This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.
As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.